

REMARKS

Claims 1-18 are currently pending in the above-identified patent application.

In a telephonic interview between the Examiner and applicant's attorney, Samuel Freund, on April 21, 2008, the issue was discussed as to whether the Riggle et al. reference teaches the limitations in independent claims 1, 9 and 11, as amended: "and such that the throughput of each of the plurality of disk drives is maximized," in view of the statement in Riggle et al., in Col. 5, lines 24-32: "One of the main objectives of grouping disk drives into an array is to meet the demands for a higher storage subsystem bandwidth. To provide the bandwidth increase in an economically feasible manner the subsystem resources must be used at their optimal capacity levels. If the storage subsystem bandwidth is configured to accommodate the highest transfer rate, the bandwidth capacity is underutilized on average because for full storage capacity utilization data must be placed on all available tracks on the disk surface." Applicant's attorney made the argument that maximizing the throughput of the disk drives was not part of the invention of Riggle et al., and therefore the rejection by the Examiner of claims 1-18 under 35 U.S.C. 102(b) as being anticipated by Riggle et al. was incorrect. No agreement was reached on this issue.

In the Office Action dated January 22, 2008, the Examiner rejected claims 1-18 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention since the Examiner stated that the term "maximized" in claims 1, 9, and 14 is a relative term which renders the claim indefinite, the term "maximized" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefore, the Examiner concluded that the throughput of each drive is rendered indefinite.

Applicant respectfully disagrees with the Examiner concerning this rejection of claims 1-18 under 35 U.S.C. 112, second paragraph. Support for the first of the amendments may be found on page 5, lines 13-15, of the subject Specification, as originally filed, wherein it is stated that: "Because the data streams 112 and 114 may be selected to be the maximum data transfer rate or throughput of the disk drives 118-126,

the embodiment 100 may have an overall data throughput of approximately twice that of the individual disk drives 118-126." Support for the second amendment may be found on page 6, line 30, to page 7, line 1, of the Specification, as originally filed, wherein it is stated that: "In a typical multiple disk storage system, the data transfer rates of data streams 320 and 322 will be approximately the same."

The American Heritage Dictionary Of The English Language, Third Edition, defines the term "maximize" as: "To increase or make as great as possible." The maximum throughput or data transfer rate of a disk drive will, of course, depend on the disk drive selected; however, one of ordinary skill in the art would understand how to obtain the maximum throughput from a drive, and further be able to determine when such maximum throughput has been achieved through simple measurement. Therefore, applicant believes that the words "maximum" or "maximized" are not relative in nature, but rather are specific to the disk storage system involved and are readily determined by the user of such a system.

The Examiner continued by stating that the term "approximately" in claims 1, 9, and 14 is a relative term which renders the claim indefinite, since the term "approximately" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In response to the Examiner's concerns, applicant has amended claims 1, 9, and 14 to remove the word "approximately." The remaining previously amended words: "an equal" are not indefinite since one having ordinary skill in the art would fully understand when a first data transfer rate of a data stream is equal to that of another data stream.

The Examiner repeated the rejections of claims 1-18 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,724,539 (Riggle et al.). Applicant respectfully disagrees with the Examiner concerning this rejection. Reexamination and reconsideration are requested.

In the Response to Argument Section of the subject Office Action, the Examiner stated that applicant argues that the relied upon reference, U.S. Patent No. 5,724,539 (hereinafter Riggle), teaches away from the teachings of the claimed invention (See remarks filed 13 November 2007). However, the Examiner asserted that Riggle et al.

teaches a method comprising addressing a plurality of data strips from data to a chosen disk of a plurality of disk drives (Col. 3, lines 6-10; and Col. 6 lines 28-31) such that the throughput of each of the plurality of disk drives is maximized (Col. 5, lines 26-31); forming a data stream comprising data strips (Figure 1 Item 90), the data stream having a first throughput (Col. 5, lines 5-8, and lines 13-17); creating a plurality of parallel data streams (Fig. 1, Item 110), each of the plurality of parallel data streams having an equal second throughput (Col. 5, lines 5-8, and lines 13-17; and Col. 7, lines 16-19), the second throughput being smaller than the first throughput (Col. 5, lines 5-8, and lines 13-17); directing the plurality of parallel data streams to a corresponding plurality of the plurality of disk drives (Fig. 1, Item 150, and Col. 6, lines 28-31) such that each data strip in the plurality of data strips is transmitted to the chosen disk of the plurality of disk drives (Col. 6, lines 31-34); and storing each of the data strips on the each of plurality of disk drives (Col. 6, lines 31-34). Therefore, the Examiner concluded that all of the present claim limitations are taught by Riggle.

Applicant respectfully disagrees with the Examiner's statement that Riggle et al. teaches a method comprising addressing a plurality of data strips from data to a chosen disk of a plurality of disk drives in Col. 3, lines 6-10, and Col. 6, lines 28-31 such that the throughput of each of the plurality of disk drives is maximized in Col. 5, lines 26-31. The Examiner's statement is applicable to independent claims 1, 9 and 14. Dependent claims 2-8, 10-13 and 15-18, were specifically rejected under 35 U.S.C. 102 as being anticipated by Riggle et al. However, since applicant believes that independent claims 1, 9 and 14 from which these dependent claims depend, are patentable over Riggle et al., applicant believes that no further response is required with respect to the dependent claims.

As stated in applicants' Amendment B dated November 13, 2007, "Riggle et al., Col. 5, lines 24-41, state: "One of the main objectives of grouping disk drives into an array is to meet the demands for a higher storage subsystem bandwidth. **To provide the bandwidth increase in an economically feasible manner the subsystem resources MUST BE USED at their optimal capacity levels.** If the storage subsystem bandwidth is configured to accommodate the highest transfer rate, the bandwidth capacity is underutilized on average because for full storage capacity

utilization data must be placed on all available tracks on the disk surface. Hence a sufficiently large sample transfer unit will span a range of track bands from the disk drives involved. The implication is that the array of disk drives will tend to transfer at an average aggregate bandwidth over a statistically large number of transfers. Having an over-configured subsystem bandwidth is thus undesirable because it results in inefficient and costly resource use of the serial subsystem elements such as the controller buffer shared among the disk drives in the array and the computer host interface bus." (Emphasis added by applicant.).

Clearly, Riggie et al. does not teach configuring the storage subsystem bandwidth to accommodate the highest transfer rate since, according to Riggie et al., the bandwidth capacity is underutilized on average because for full storage capacity utilization, data must be placed on all available tracks on the disk surface. Riggie et al. teaches further that to provide bandwidth increase in an economically feasible manner, the subsystem resources must be used at their optimal capacity levels.

Subject claim 1, as amended, recites in part: "...addressing a plurality of data strips from said data to a chosen disk of said plurality of disk drives such that the throughput of each of said plurality of disk drives is maximized; forming a data stream comprising said data strips, said data stream having a first throughput; creating a plurality of parallel data streams, each of said plurality of parallel data streams having an approximately equal second throughput, said second throughput being smaller than said first throughput" (Emphasis added by applicants.). Similar language may be found in independent claims 9 and 14, as amended.

It is known that "Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *Soundscriber Corp. v. U.S.*, 360 F.2d 954, 960, 148 USPQ 298, 301, adopted, 149 USPQ 640 (Ct. Cl. 1966). Subject independent claims 1, 9 and 14, as amended, recite maximizing the throughput of each of said plurality of disk drives. Riggie et al. does not teach this limitation. Rather, Riggie et al. teaches that if one maximizes the throughput of each disk drive, the bandwidth capacity is underutilized on average because for full storage capacity utilization data must be placed on all available tracks on the disk surface. Thus,

applicant respectfully believes that Riggle et al. does not anticipate independent claims 1, 9 and 14, as amended."

The Court in *Upsher-Smith Labs v. PamLab, LLC*, 412 F.3d 1319, 1323, 75 USPQ2d 1213, 1215 (Fed. Cir. 2005) stated: "In an attempt to rebut PamLab's evidence of anticipation, Upsher-Smith argues that the European Application's discussion of the benefits of adding antioxidants to the compositions actually teaches away from expressly excluding antioxidants. However, "a reference is no less anticipatory if, after disclosing the invention, the reference then disparages it. Thus, the question whether a reference 'teaches away' from the invention is inapplicable to an anticipation analysis."

The Title of the Riggle et al. patent is "System For Selectively Storing Stripes Of Data In Tracks Of Disks So That Sum Of Transfer Rates Of Stripes Match Communication Bandwidth To Host". Moreover, as stated hereinabove, Riggle et al. states: "One of the main objectives of grouping disk drives into an array is to meet the demands for a higher storage subsystem bandwidth. **To provide the bandwidth increase in an economically feasible manner the subsystem resources MUST BE USED at their optimal capacity levels.** The invention of Riggle et al. is clearly to provide a higher storage subsystem bandwidth. In order to do so, Riggle et al. teaches that the subsystem resources must be used at their optimal capacity levels. The use of the language "must be used" does not permit the language: "If the storage subsystem bandwidth is configured to accommodate the highest transfer rate, the bandwidth capacity is underutilized on average because for full storage capacity utilization data must be placed on all available tracks on the disk surface." as part of the invention. Thus, the **INVENTION** Riggle et al. does not include configuring the storage subsystem bandwidth to accommodate the highest transfer rate. Nor does Riggle et al. then disparage this restriction. By contrast, applicant respectfully believes that Riggle et al. is simply stating that this is **NOT** the invention.

The Court in *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004) stated: "Appellants quote language from *In re Gurley* that "[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." 27 F.3d at 553.

Appellants argue that “the prior art disclosed alternatives to each of the claimed elements A [the perimeter], B [the shape of the surface], and C [the orientation of the surface]. Choosing one alternative necessarily means rejecting the other, i.e., following a path that is ‘in a divergent direction from the path taken by applicant.’” This interpretation of our case law fails. The prior art’s mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed in the ‘198 application. Indeed, in the case cited by appellants, In re Gurley, we held that the invention claimed in the patent application was unpatentable based primarily on a prior art reference that disclosed two alternatives, one of which was the claimed alternative. Accordingly mere disclosure of alternative designs does not teach away.”

Applicant respectfully asserts that Riggle et al. is not disclosing configuring the storage subsystem bandwidth to accommodate the highest transfer rate as an alternative design. Rather, as stated hereinabove, Riggle et al. is simply stating that this is **NOT** the invention.

Applicant therefore respectfully believes that Riggle et al. does not anticipate independent claims 1, 9 and 14 of the present invention.

In view of the discussion presented hereinabove, applicant believes that subject claims 1-18, as amended, are in condition for allowance or appeal, the former action by the Examiner at an early date being earnestly solicited.

Reexamination and reconsideration are respectfully requested.

Respectfully submitted,

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